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AUTHOR Owen, Steven V.; Froman, Robin D.
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ABSTRACT

This research examines the interaction between college students' control orientation and a discrepancy score of GPA minus expected grade in course, on the dependent measure of 13 student rating items. It was hypothesized that students with an external locus of control who also showed a discrepancy between expected and actual grades would distort ratings in the direction of the discrepancy. Regressions were performed on data from 200 Ss. In four regressions, the interaction term was significant; thus the hypothesis was partially supported. As these four items had been shown to be particularly important, the influence of locus of control is interpreted as a reduction in validity of student rating instruments. (Author)

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Relationships Among Locus of Control, Grades, and Student Ratings

Steven V. Owen Robin D. Froman

University of Connecticut

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Introduction and Objectives

Student ratings of instruction continue to grow in popularity and use. The research literature, comprised generally of scale development and validity studies, is largely supportive of student ratings, and this support surely has helped to increase ratings' popularity. However, two major problems occur repeatedly in research on student ratings of instruction. First, many researchers imply that positive outcomes with a particular scale at a particular school should generalize to all scales and schools. There is ample evidence to suggest that scale properties do not generalize so easily (Owen, 1976; Doyle and Whitely, 1974), and more especially, that even students of different major areas perceive instructor competencies differently (Slater and Owen, 1974). Second, many studies have used univariate statistical analyses, sometimes resulting in great loss of data and perhaps a distortion of the results.

The construct of locus of control has been shown to relate to a large number of behaviors: academic achievement, political activism, responsiveness to external feedback, psychopathology, ability to delay gratification, and so on (Lefcourt, 1976). The literature is sparse, however, on the relationship between locus of control and students' perception of teacher competence. A single study by Flanders, Morrison, and Brode (1968) showed that 6th grade students with an external locus of control showed more decline in attitudes toward teachers over the school year than did their internal peers. They

hypothesized that the external youngsters' attitudes reflected their dependence on external sources of feedback (e.g., the absence of teacher praise).

Such a relationship between control orientation and attitudes would suggest an interesting individual difference in perception and evaluation; but it would also be damaging to the validity of a rating instrument, as it points to a systematic source of extraneous variance.

Another variable which has been shown to influence student ratings is the expected grade in a course (Weaver, 1960). Yet, a related variable is typically even more striking in its influence on ratings: the discrepancy between expected and actual grades (Bausell and Magoon, 1972; Kennedy, 1975; Lolli, 1976). In brief, these students who expect a grade higher than their actual grade tend to be "generous" in ratings, and vice versa.

Because discrepancies in actual and expected grades represent a source of dissonant and external feedback, it might be predicted that students with an external locus of control would be most influenced by discrepancies, and internal students, least influenced. Thus, if this hypothesis holds true, an interaction between locus of control and grade discrepancy would be seen. The present research was designed to test this interaction.

Methods

One hundred ninety-six college students in geography and education were administered two instruments in the last week of classes, and prior to the award of final grades. The instruments were, first, the Nowicki-Duke Locus of Control Scale for Adults (1974), and an instructional rating form whose development is described elsewhere (Lolli and Owen, 1976). The instructional rating form consists of several bits of demographic data (i.e., semester standing, expected grade, etc.), 13 high inference evaluative items (i.e.,

demonstrates overall organization; almost never...almost always), and 51 low inference items in a checklist format (i.e., spoke in a monotone)(see Appendix A). The two data sources were administered in a random order to students, to control for a potential sequence effects in testing. A discrepancy score was created for each student by subtracting the self-reported grade point average (GPA) from the expected grade in the course.

Using stepwise multiple regression techniques, the data were analyzed in this fashion: the two main effects--locus of control score, and the discrepancy score--were forced into the regression equation. The interaction between these two effects was then entered and tested for incremental validity as follows:

$$F = \frac{(R_1^2 - R_2^2) / (m_1 - m_2)}{(1 - R_1^2) / (N - m_1 - 1)}$$

(Kerlinger and Pedhazur, 1973, p. 178)

The regressions were repeated 13 times, in each case using one of the 13 high inference rating items as the dependent variable.

Table 1 depicts the means and standard deviations on all variables. On three of the 13 multiple regression analyses, the interaction between locus of control and grade discrepancy showed significant incremental validity (see Table 2). Two additional interaction terms approached significance. Although the Rs were low (.15 to .24), the occasional significance of the interaction term suggests that some systematic variation in student ratings can be attributed to the personality characteristics of locus of control. An inspection of the three significant interaction terms reveals the pattern hypothesized. External students who expected a grade higher than their GPA "reward" the instructor; externals who expect a grade lower than their GPA sometimes respond

with a lower rating of the instructor. For illustrative purposes, Figure 1 shows the interaction between control orientation and grade discrepancy for evaluative item 5.

The results take on clearer nature when the dependent measures are examined more carefully. In prior principal components studies of the 13 high inference items (here used as criteria), two principal components emerged, and were named "teaching effectiveness" and "interaction with students." As it happens, the three criterion items significantly predicted by the interaction term in the present research are the same three items which showed the highest component loadings in the earlier studies. The component loadings of .80 to .90 show that these three items weight heavily in the overall construct validity of the scale. It can be inferred in turn that the present regression results are not merely circumstantial; they represent small but systematic sources of "noise" in the rating of teachers.

The practical significance of the present results is not yet clear. Obviously, replications must be carried out to determine the generalizability of the results. If the results prove generalizable, should we discount external students' ratings of their teachers? It could be argued that because the effect occurs only occasionally, and because it is not a massive source of variation, we should live with it as error variation. On the other hand, teachers whose livelihood depends partially on student ratings might insist that the data be "cleansed." Consider further the possible rating distortions that might occur in a class where the instructor were overly "generous," or where the instructor is a "hard" grader.

Currently underway are analyses intended to combine several nagging sources of extraneous variation in ratings. Of interest here is whether the sources are additive, or overlapping and thus less damaging to the construct validity of rating instruments.

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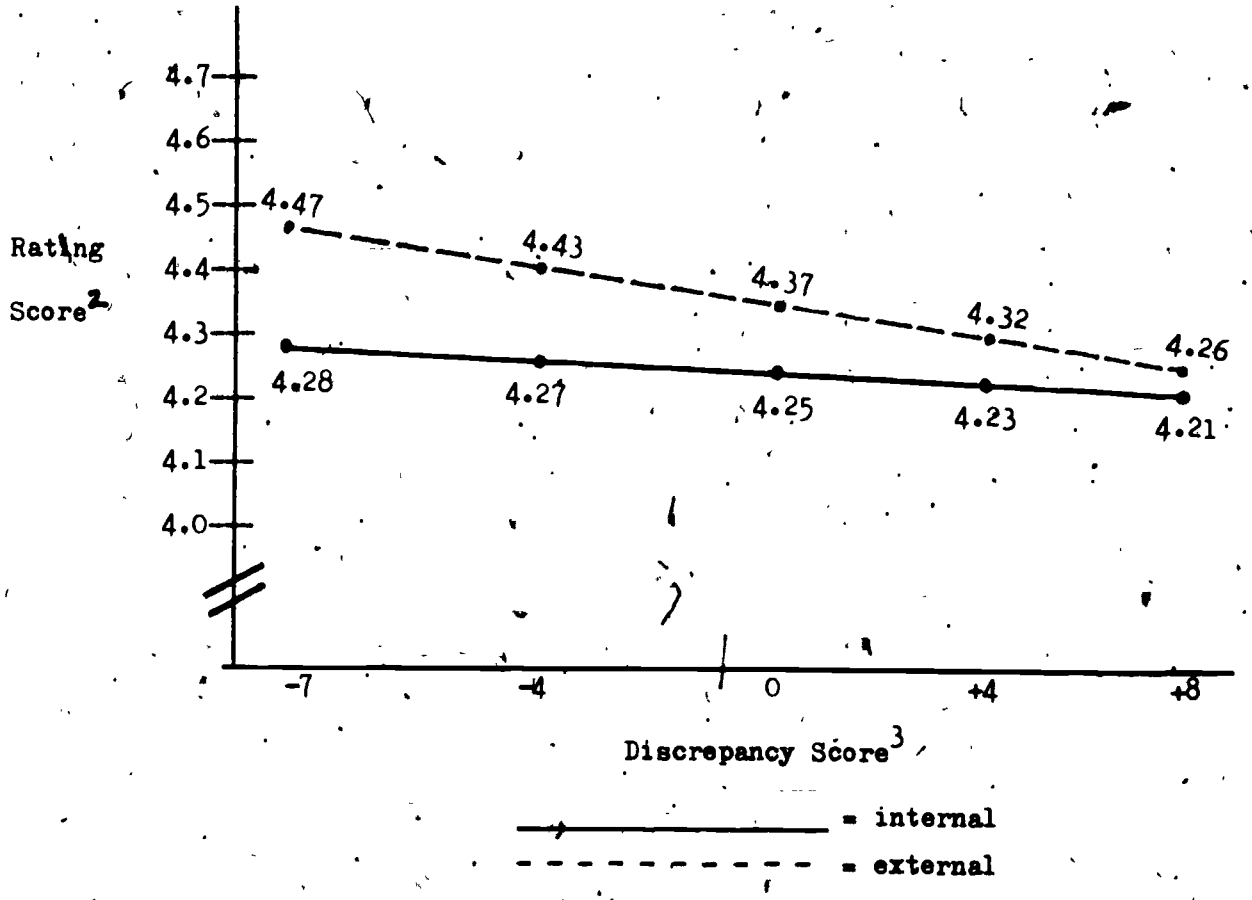
Figure 1

Plot of Interaction Term for Evaluative Item Five[1]



[1]To illustrate the interaction regression plane for item 5, students with locus of control scores one s.d. above the mean (12) and one s.d. below the mean (4) were chosen. They are labeled, respectively, as "external" and "internal".

[2]Ratings on all items range from zero (low) to five (high).

[3]Discrepancy scores were coded from -7 (low GPA expecting a high grade) to +8 (high GPA expecting a low grade).

Table 1

Means and Standard Deviations of All Variables

Variable[1]	Mean	Standard Deviation
1	3.6205	0.7595
2	4.2135	0.7099
3	4.7371	0.6964
4	4.4490	0.6961
5	4.3112	0.7579
6	4.3673	0.7698
7	4.3386	0.7520
8	4.4409	0.7981
9	4.2139	0.9083
10	4.1379	0.8915
11	4.4000	0.8194
12	4.2786	0.8402
13	4.4107	0.7917
LOC	8.4694	3.9735
DISC	1.9388	31.2562
XPROD	21.9337	276.6841

[1] Variables 1 through 13 represent ratings Items; their stems are given in Appendix A. LOC = Nowicki-Duke Locus of Control Score; DISC = Discrepancy between expected grade and current grade point average; XPROD = Interaction term of LOC and DISC.

Table 2

Summary of Regression Outcomes for Prediction of Thirteen Evaluative Items (N = 196)

Item[1]	Predictors[2]	R	R^2	F for Incremental Validity Test
1	LOC	.084	.007	
	DISC	.096	.009	
	XPROD	.120	.014	1.01 (n.s.)
2	LOC	.132	.017	
	DISC	.133	.018	
	XPROD	.192	.037	3.71 (n.s.)
3	LOC	.168	.028	
	DISC	.170	.029	
	XPROD	.170	.029	0.04 (n.s.)
4	LOC	.055	.003	
	DISC	.059	.003	
	XPROD	.152	.023	3.80 (n.s.)
5	LOC	.061	.004	
	DISC	.080	.006	
	XPROD	.185	.034	5.51 ($p < .05$)
6	LOC	.053	.003	
	DISC	.057	.003	
	XPROD	.058	.003	0.02 (n.s.)
7	LOC	.080	.006	
	DISC	.081	.007	
	XPROD	.084	.007	0.09 (n.s.)
8	LOC	.010	.000	
	DISC	.021	.000	
	XPROD	.036	.001	0.15 (n.s.)
9	LOC	.138	.019	
	DISC	.143	.021	
	XPROD	.144	.021	0.04 (n.s.)
10	LOC	.011	.000	
	DISC	.138	.019	
	XPROD	.138	.019	0.09 (n.s.)
11	LOC	.038	.001	
	DISC	.043	.002	
	XPROD	.050	.002	0.05 (n.s.)
12	LOC	.103	.011	
	DISC	.127	.016	
	XPROD	.237	.056	5.69 ($p < .05$)
13	LOC	.042	.002	
	DISC	.053	.003	
	XPROD	.229	.052	8.50 ($p < .01$)

[1] For item stems, see Appendix A.

[2] LOC = Nowicki-Duke Locus of Control Score; DISC = Discrepancy between expected grade and current grade point average; XPROD = Interaction term of LOC and DISC.

Appendix A

The University of Connecticut Survey of Courses and Teaching

Department ____ Course # ____ Section ____ Branch ____ Instructor ____

DIRECTIONS: PLEASE USE A NO. 2 PENCIL TO FILL IN APPROPRIATE BLOCKS. DO NOT MAKE STRAY MARKS. DO NOT SIGN YOUR NAME. ERASE CLEANLY IF YOU CHANGE AN ANSWER. RESULTS WILL NOT BE SEEN BY THE INSTRUCTOR BEFORE THE COURSE IS COMPLETED.

Semester Standing	Is Course in Your Major	Expected Grade in This Course	Cumulative Average (QPR)	How Often Did you Attend Class
1-2	Yes	A	Less than 10	90-100%
3-4	No	B	10-14	75-89%
5-6		C	15-19	50-74%
7-8		D	20-24	25-49%
9 or more		F	25-29	0-24%
Graduate		Pass	30-34	
		Audit	35 or more	

1. How much have you learned from this course? ☐ almost nothing ☐ a little ☐ a moderate amount ☐ quite a bit ☐ a great deal
2. How would you rate this instructor in general all around teaching ability? ☐ poor ☐ less than adequate ☐ average ☐ good ☐ excellent

Please omit those of the following items which are not appropriate

In my opinion, this instructor

	almost never	occasionally	sometimes	most of the time	almost always
3. Meets class regularly and on time	☐	☐	☐	☐	☐
4. Presents material in a clear and effective manner	☐	☐	☐	☐	☐
5. Demonstrates overall organization	☐	☐	☐	☐	☐
6. Makes purpose and objectives of course clear	☐	☐	☐	☐	☐
7. Fulfills class objectives	☐	☐	☐	☐	☐
8. Makes work assignments and student responsibility clear	☐	☐	☐	☐	☐
9. Stimulates interest	☐	☐	☐	☐	☐
10. Uses examination items which stress important aspects of course	☐	☐	☐	☐	☐
11. Grades fairly and impartially	☐	☐	☐	☐	☐
12. Is accessible to students both in and out of class	☐	☐	☐	☐	☐
13. Shows an interest in and concern for students	☐	☐	☐	☐	☐

DIAGNOSTIC CHECK LIST: The following is for the use of your instructor for the purpose of identifying areas of performance which need improvement. Please check ONLY those areas which you found to be PARTICULARLY TROUBLESOME OR BOTHERSOME.

THE INSTRUCTOR:

14. ☐ was consistently late in starting or ending class
15. ☐ was consistently unprepared
16. ☐ had illegible handwriting
17. ☐ came to class intoxicated or otherwise incapacitated
18. ☐ had a distracting smoking habit
19. ☐ seemed unfriendly toward students
20. ☐ criticized and embarrassed students unfairly
21. ☐ was patronizing, talked down to students
22. ☐ maintained attitude of "I am always right"
23. ☐ enforced pointless rules
24. ☐ seemed preoccupied with personal problems
25. ☐ neglected course for other activities
26. ☐ was too dogmatic or opinionated to present materials fairly
27. ☐ displayed favoritism toward certain students
28. ☐ displayed prejudice on the basis of race, sex, religion, ethnicity, etc.
28. ☐ spoke in a monotone
30. ☐ was difficult to hear or understand (mumbles, accent, inaudible)
31. ☐ had distracting speech habits
32. ☐ had distracting mannerisms (nervousness, pacing, twitch, etc.)
33. ☐ used too much profanity, vulgarity
34. ☐ engaged in too much idle chit-chat
35. ☐ just read lectures
36. ☐ presented dull, boring lectures
37. ☐ did not cover materials in depth, too superficial
38. ☐ presented too much detail or trivia
39. ☐ did not stress important points
40. ☐ presented material at too fast a pace
41. ☐ presented material at too slow a pace
42. ☐ went over the same thing too often
43. ☐ did not use enough illustrations, examples
44. ☐ spent too much time on class discussions
45. ☐ spent too little time on class discussions
46. ☐ responded to questions in a vague and confusing manner
47. ☐ assigned reading materials and then ignored them
48. ☐ did not explain what was expected on exams or assignments
49. ☐ did not provide enough feedback or comments on exams or papers
50. ☐ was slow in returning graded work
51. ☐ stressed rote memorization or trivia rather than understanding on exams
52. ☐ applied grading standards inconsistently
53. ☐ grades too easily
54. ☐ did not provide enough exams or other materials for evaluation
55. ☐ required purchase of costly materials which were not worth the price
56. ☐ assigned too much "busy work"
57. ☐ makes unreasonably long and burdensome assignments

THIS COURSE:

58. ☐ too much smoking took place
59. ☐ cheating was widespread
60. ☐ enrollments were too large for effective instruction
61. ☐ content was not sufficiently challenging
62. ☐ content was over my head, too difficult
63. ☐ content did not match expectations, catalog description
64. ☐ too much responsibility was delegated to graduate assistant